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Cable Television and Satellite Broadcasting

J.F. Blackburn

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Sponsored by the Financial Times, this 2-day conference was the eighth in the annual series. This particular conference marks the end of the first year of the Sky Television network's operation in the U.K. The conference was held just before British Satellite Broadcasting (BSB) goes into operation.

With speakers from the U.K., the U.S., France, Japan, and the Netherlands, attendance exceeded all previous conferences. The 400 participants came mainly from the U.K., but also represented were France, the Netherlands, U.S., Australia, Spain, Norway, Canada, Switzerland, Denmark, Federal Republic of Germany (FRG), Finland, Monaco, Belgium, South Africa, Italy, Luxembourg, Irish Republic, and Malta.


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## Contents

# Cable Television and Satellite Broadcasting

## Introduction

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## Opening Address

Mr. David Mellor, Minister of State, responsible for Broadcasting

Parliament's responsibility is to improve bills, rather than simply to pass or reject them. Yesterday, we accepted eight of 33 proposed amendments to the Broadcasting Bill (Bill). These had to do with the allocation of franchises and the interrelation between the competitive tender and the final choice. The Bill assures that the U.K. will take advantage of the opportunities now available, and thus strengthen Britain's role in international television. We must consider the opportunities provided by satellite television. There is no goal to destroy the duopoly, but rather to seize new opportunities.

We are witnessing a satellite revolution lead by entrepreneurs on the Astra channel. We now have eight extra channels available. Choice will be enlarged to the enhancement of quality. We look forward to the launch of BSB, which will provide us with further choice. On the question of satellite and cable, we want both. We have resisted attempts to over-regulate. Not all public sector obligations need to be applied. However, we must ensure that television is not taken over by pornography and violence in programs.

The Bill takes seriously the obligations to cable. Cable is now poised to witness dramatic expansion. And, let me add, that we welcome overseas interest in investment in cable service. We need to expand the subscription of those homes that can receive cable services; i.e., more subscribers when cable is laid in their area.

The government needs to take a neutral position toward the various methods of providing television. For example, on the question of the use of microwave or cable, the provider's judgment should win.

On the question of competitive tender, we intend to introduce no concept of levy. The cable position will be strengthened with the increased need for data transmission. Also, some of the cable companies are offering telephony service. A good many North American companies have seen the potential for cable services in the U.K. Telephony may represent an extensive expansion of the market. Present franchise holders can become new style providers if they apply in time. The satellite broadcasters offer the cable operators programs that they need. The two services complement each other.

In summary, we welcome competition that leads to high quality programs. This enhances the commercial base of Britain as well as her reputation around the world. Via audience participation, Mr. Mellor provided the following information.

- Present operators that have made a success should be able to continue.
- The European Commission rules have the support of law. As to timing, the law is open to representation.
- My office does not prepare forecasts; however, the treasury does. We believe this is a market lead matter and that we must not burden it with requirements.

## Presentations

**How Many Channels Can Astra Deliver?**, Dr. Pierre Meyrat, Director General, Societe Europeenne des Satellites

When does the 21st century begin? In Europe, the 19th century began in 1789, the year of the French Revolution and the beginning of the Age of Enlightenment. If you accept this logic, then the 20th century began in 1889, and the 21st century began in 1989. In both political and economic terms, this was the year marked by the march towards freedom of many countries.

Mass communication is the sign of the new century. Despite Orwellian suspicions, television has brought us together. This has made global confrontation and conflagration less likely. For Astra, 1989 was a year of revolution. Astra broadcasts in many languages and the international environment dominates. As Europe re-

by J.F. Blackburn. Dr. Blackburn is the London representative of the Commerce Department for Industrial Assessment in Computer Science and Telecommunications.

shapes for 1992, Astra shows the way to achievement in private enterprise. As Europe moves to a single market, Eastern European frontiers are coming down.

Astra recognizes no frontiers and offers complete freedom of choice. In one year, we have brought Astra to 15 million homes in Europe. This is only a fraction of the 120 million homes in Western Europe at which we are aiming. As a result of the events in Eastern Europe in 1989, that market has grown beyond expectations. We hope that Astra may reach 42 million homes by the end of the decade, and another 35 million by direct-to-home (DTH) reception.

The future penetration rate of DTH in the U.K. is difficult to predict, but the most recent estimate from Continental Research for the Financial Times expects 1.4 million homes in 1990, 5 million by the end of 1993, and rising to 9.3 million by 2000.

The breakthrough for Astra came late in 1989 in the German-speaking market with the signature of the top private channels SAT-1, RTL plus, PRO-7, and the film service--Teleclub. After Astra's success in the Scandinavian and Dutch markets, the programers themselves gave a decisive vote of confidence for Astra in this fourth market.

Astra 1B will be launched in October 1990, into the same geostationary orbital position as Astra 1A (19.2$^{\circ}$ east). Astra 1B will appear to the user as another 16 channels, receivable on the same equipment bought for Astra 1A. The fixed dishes will pick up both satellites without any modification. The electronics and receivers have the frequency range to handle the new adjacent frequencies of Astra 1B.

On Astra 1A, there are 7 dedicated transponders carrying 10 different English language program strands. Adding three English channels of Astra 1B will make the offering 10 transponders and 15 or more program strands, all available on existing dishes.

Possibly, transponders with suitable power for High-Definition Television (HDTV) could be launched into the same orbital position. This would permit broadcasters to transmit in existing transmission standards. Simultaneously, they could broadcast the same channel at levels of quality unknown today, probably for giant screen projection at home. Both signals would be receivable on the same fixed dish. There are between 50,000 and 100,000 dishes in FRG. Dr. Meyrat provided the following information resulting via audience participation:

- The D2-Multiple Analog Component (MAC) may not be enough for the unknown standards for HDTV. The D2-MAC uses the same power as Phase Alternating Line (PAL), but HDTV may need more power.
- We are interested in customer choice, not brand marketing. Sky programs are a combination of DTH and cable.

**Launching the U.K. Direct Broadcast System (DBS) Satellite System**, Mr. Anthony Simonds-Gooding, Chief Executive, BSB Ltd.

On April 29, 1990, BSB will be on the air for all to see. The success of our launch will depend not only on equipment availability, but also on the market opportunity. So, let us look first at the market opportunity.

British television viewers average watching 25 hours of television per week. However, according to the Independent Broadcast Authority's (IBA) findings, 44 percent of viewers say they cannot find programs that they want to watch when they want to watch them. This is not surprising. Over the last 45 years, Britain has evolved only four channels, two of which are designed to appeal to minority interests. This leaves two to satisfy the mainstream tastes of everybody else. Inevitably, this leaves a large part of the audience dissatisfied.

The problem is the scheduling, with the broadcaster deciding what you watch and when. Films are very popular, as shown by the 7 million people who rent video films every week. Yet, broadcasters allotted only 15 hours per week to films during peak TV time. In contrast, BSB's Movie Channel will offer 31.5 hours of film per week during peak time. The terrestrial channels during peak time average only 4.5 hours of sports programing. BSB's Sports Channel will offer the fan 35 hours per week. Teenagers and young adults are spending half a million pounds per year on the music industry, and yet just 2 hours are put aside weekly at peak time for music. This compares to 35 hours on BSB's Power Station. On the arts, which attract a smaller audience, the terrestrial channels offer 3 hours per week during peak time. BSB will offer at least 10 hours each week.

To take its share of the market, BSB will be viewer lead. We will offer the more recent films. We will consider sport, which is second in importance for men. We recognize that program demand varies by viewing group. We will offer theme channels and transfer the choice to the viewer of what to see and when.

Quality has different meaning for different groups. Quality means well made program of its kind. We will use a combination of factors which will bring the right quality to the market. This will include acquired programs, commissioned new material, specialized channels, flexibility, and scheduling. There will be five program choices each evening at 6, 8, and 10.

Our research shows that at a cost of £10 per month, 75 percent of people would be interested in subscribing to a movie channel. In America, the average cable household spends about £22 per month on subscription, in addition to occasional pay-per-view events. In France, Canal Plus with its film-based subscription service is very profitable.

The future of television lies in its ability to listen to viewers and provide them with the sort of quality programs that they want to watch at the times when they are

available to view. Mr. Simonds-Gooding provided the following information via audience participation:

- We are absolutely delighted that IBA required the MAC family.
- There are two different viewer services--video tapes and satellite TV.
- We will work with the retailer/renter trade. Most equipment will be provided by companies like Granada and Thorn for sale of hardware and services.

**How DBS Has Been Developed in Japan**, Mr. Kinya Inoue, Director of Public Relations, Nippon Hoso Kyokai (NHK)

In 1945, Arthur C. Clark first suggested using a stationary satellite for telecommunications. His idea became reality as a communications satellite in the 1960s, and such a satellite is now becoming vital for the transmission of broadcast programs.

In 1966, NHK started research and development of a broadcasting satellite. This was expected to serve households in mountainous areas or remote islands.

In April 1978, NASA launched and put into stationary orbit an experimental broadcasting satellite, called BS. In parallel with the experimental broadcasting satellite program, the NHK started a practical service, BS-2.

The NHK is Japan's sole public broadcasting organization. In 1976, it had 4,500 transmitting stations across the nation for its two-channel, terrestrial TV broadcasts. However, NHK estimated that about 400,000 households in mountainous areas and on remote islands were unable to receive TV. The NHK and the Japanese government jointly promoted the BS-2 program to reach these remote households.

Japan launched a broadcast satellite in 1984 that conforms to International Telecommunication Union (ITU) standards, and started one-channel broadcasting over all of Japan in May 1984. Satellite service on two channels providing 24 hour-a-day broadcasting began in June 1989.

The space segment of the BS-2 system is composed of BS-2a and BS-2b satellites positioned each at 110 degrees, east longitude. BS-2b is a back-up for BS-2a. These two satellites were launched by Japan's N-II launcher in January 1984 and February 1986, and put in stationary orbit. Only BS-2b remains in use today. Signals from 100-W transponders can be received very clearly on Japan's main island, Honshu, with a 45-cm antenna. As a result of the demise of BS-2a, BS-2x was launched in February 1990 as a back-up for BS-2b. The number of households with BS receivers topped 2 million as of the end of 1989. The goal is to reach 4 million households within 2 years. The life of BS-2b is expected to end in early 1991 and BS-3 will take over its mission. The BS-3 program will have two satellites--BS-3a and BS-3b--scheduled for launching in summer 1990 and summer 1991.

In July 1987, NHK started to use one of the two satellite channels exclusively for satellite programs on a 24 hour per day basis. In June 1989, it began broadcasting for 24 hours per day on both satellite channels. In August 1989, the NHK started to collect reception fees from households with satellite broadcasting receivers under new satellite reception contracts.

All programs presented on Satellite Channel 1 cover mainly world news and sports events, and are exclusively for satellite service. The NHK has developed an automatic translation machine, which translates English into Japanese, and is now being used for a part of the news programs.

On Satellite Channel 2, about 40 percent of the programs are produced exclusively for the satellite service, with the remaining 60 percent consisting of terrestrial TV programs intended for remote places complaining of poor reception from the terrestrial stations. In Japan, cable TV systems and services providing programs for cable TV using a communications satellite are still at an early stage. Thus, the scope of TV program selection for the audience is narrow.

Terrestrial broadcasting has thus far been the mainstay of TV broadcasting in Japan. However, cable TV which can provide a variety of programs is expanding its network, especially around and within major cities. Also, program-supplying services for cable TV using commercial communications satellites have already begun. Using commercial communications satellites, the NHK formulated an institutional framework in June 1989 to present programs directly to individual households. Preparations for introducing it are underway. Finally, a commercial satellite broadcasting company using the most up-to-date broadcasting satellite, BS-3, will begin business later in 1990.

The television of the future--HDTV--is already in practical use in Japan resulting from 25 years of research. The NHK has been providing a daily 1-hour program on HDTV since June 1989 using the BS-2b satellite. The HDTV, called Hi-Vision in Japan, displays large, sharp, beautiful pictures. Coupled with high fidelity sound, the NHK expects HDTV to increase the popularity of satellite broadcasting and attract an even larger audience.

Succeeding the BS-3 program, the next generation of broadcasting satellite is likely to be launched in 1997. In this new generation, services using eight channels assigned to Japan will be possible, and will offer the following services: wide range of TV programs, HDTV programs, and Integrated Services Digital Broadcasting (ISDB). The ISDB is broadcasting in which pictures, sounds, facsimile, and computer software are integrated into one satellite TV channel in the form of digital signals. The boundary between broadcasting and telecommunications is now blurred. Hence, Japan is entering an era in which the trend toward multichannels will increase.

**Can Europe be a Profitable Market for Satellite TV?**, Mr. Francis Baron, Managing Director, WH Smith TV

Let us look at a short history of pay TV. The lifespan for film channels has been very short. Now, in Europe, it appears viable to provide one service per language area. Sky Channel, the most successful, has now retreated from Europe. Others with modest success include Music Box, TV 5, and Super Channel, which has been sold.

WH Smith TV (WHSTV) could not see going Europe-wide for English language only. So, we have decided to invest in the facilities needed to become multilingual. Television Sport was launched in Paris in 1987, in French; it was launched in German in November 1988 and in Dutch in January 1990. Other programs will be launched.

We have created local brands of programs as well as local languages. In the future, we intend to use our own transponder to produce local versions of programs. We also plan to follow with other services, including Cable Jukebox in French in March 1990, and Life Style in Swedish, Dutch, and German. We strongly believe that European satellite TV must be on a country or linguistic basis. Where networking is possible, more profit is possible.

The main criteria for profitability are:

- Ability to earn two streams of revenue--advertising and subscription
- Level of incremental costs
- Level of penetration of TV households through cable and DTH
- General competition in the area.

**County Analysis**

- France. WHSTV has operated in France since 1987, where dual revenue is legally possible. Our cable experience is at an early stage, but it looks as if it will reach about 1.3 million subscribers by 1992. In France, there is a wide range of programing services for cable. This is a small base, and penetration may remain below 10 percent until the mid 1990s. However, we can break even at 1 million households. The cost of operation is relatively high and competition is strong and increasing.
- FRG. The FRG is now the largest market. However, revenue is from advertising only. Penetration of the market potential is relatively high and growing; it is 30 percent through cable. Also, Astra is on the scene.
- Holland and Belgium. This market is the second largest, after the FRG, and the penetration is high. Useful advertising revenue is easy, but subscription revenue is difficult.
- Scandinavia. This market is cable-driven with subscription fees possible, and revenue is growing.
- U.K. The U.K. market is complex and difficult. There is relatively high viewing, with low regulation and deregulation for satellite programs. The problem has been distribution, but with Astra, and soon BSB, there will be adequate but expensive means of delivery. There will be competition, with two of everything including two incompatible satellite systems.

In summary, the profit ranking of the above areas in the medium term of about 3 years is:

1. FRG because of both cable and DTH
2. Scandinavia because of low, incremental cost
3. Holland and Dutch-speaking Belgium
4. France and the U.K. about equal. In France the market is small but growing, and the U.K. should be profitable by the mid 1990s.

**Satellite Television - Prospects for Long-Term Viability**, Mr. Andrew Neil, Editor, The Sunday Times (Mr. Neil was responsible for launching Sky Channel)

The campaign against Sky Channel through rumors and misinformation and treatment of BSB with kid gloves surprises me. BSB is responsible for many broken promises:

- No news channel, though promised
- The price will be double the original
- The launch has been delayed from August 1989 to April 1990
- There is no 12-inch square antenna, as promised.

The BSB has been guilty of spoiling advertising; e.g., "don't buy Sky." And BSB has tried a political campaign to drive Sky off the air. The company has also raised the red herring of cross ownership and has claimed that the Sunday Times showed bias toward Sky.

Sky represents the most successful introduction ever, when compared to other ventures. It is now in 1.3 million homes, of which 1 million are in Britain and 300,000 are in Ireland. Sky cannot cope with the demand for dishes and 300,000 homes have signed up for movies. Sky news, Sky movies, Europe Report are successful, and there have been no technical problems.

As Sky climbs to 2 million homes this year, it will become more profitable. The investment was long term with high risk, but it was done with no public money. Sky now is a business and most of the money made will be reinvested in Sky. Sky will move on to 3 million homes, reinvest, and then build to 5 million. Mr. Neil provided the following information via audience participation:

- I disagree with the Financial Times satellite monitor month by month. But, I agree with the average.
- As to when will advertising revenue outstrip subscription revenue, it depends on the ceiling. If the ceiling is 4-5 million homes probably never, but if the ceiling is 10 million advertising revenue will certainly rival subscription revenue.

**Guest Lunch Speaker**, Mr. George Russell, Chair, IBA

Let us consider the basic premise of the changes that lie ahead. Differences of opinion may abound about what the government proposes. However, its approach is an honest attempt to bring a coherent strategy to the future development of our television system.

The White Paper had its imperfections, but its goals were clear: to stimulate competition and choice, and to protect quality. Competition was manifested this morning with the combative speeches from BSB and Sky Television. Another thrust comes from the cable industry, now growing rapidly. By the end of this year, all the heavily populated areas of the U.K. will have been licensed for cable. Satellite is direct competition for terrestrial services, but cable has a more sophisticated appeal. Satellite offers not only a wider range of choice, but also a more convenient way of reception.

The option of a single broadband cable makes available virtually every service. Additionally, it can offer an alternative to the need for separate rooftop aerials and satellite dishes. This is an attractive proposal for a listed Georgian house in a city center where the paraphernalia of modern television is an unattractive addition. However, in a less densely populated Cotswold village where cable is uneconomic, Independent Television (ITV) will certainly be exploring the development of Microwave Delivery Service (MVDS).

The Independent Television Commission (ITC) probably will absorb the television regulatory responsibilities of the IBA and the Cable Authority. The Radio Authority is responsible for introducing at least 300 local stations and three national networks. The Transmission Company in privatized form will succeed the IBA's engineering division. All three will be built on the considerable skills and experience which exists within the current bodies.

The process has been fast and fair and may contain some useful pointers which could help the ITC when it considers the Channels 3 and 5 licenses. An important change that the ITC will make is the transfer of the status of broadcaster from the regulator to the licensees. The engineering transmission company will remain as a single entity. The government has also accepted the need to assure that the expertise of the IBA's engineering research and development department is protected. The development of the teletext system and the invention of the D-MAC satellite technology are among its great achievements. IBA engineers have been at the forefront of the European Research Coodination Agency (EUREKA) project to develop a European HDTV system to challenge the Japanese dominance in this vital area.

Mr. Mellor has said that those who questioned the quality provisions in the Bill were mistaken. My ITC colleagues and I will have extensive powers to seek high standards in the quality threshold for Channel 3 and to enforce them if the licensees drift off course. That is an obligation we welcome.

However, as the Bill stands, it obliges the ITC to offer most of the teletext capacity on Channel 3 (operated now on ORACLE) competitively for almost any data transmission purpose, which may or may not be for public consumption. Also, some of British Broadcasting Company's (BBC) Ceefax capacity may be handed over to the ITC for similar disposition.

In the IBA's view, this would be a serious loss to viewers. This British invention (teletext) has now been accepted as a worldwide standard, with 20 million sets in use throughout Europe, 6 1/2 million in the U.K. alone. Since the extra cost for teletext is now around £50, teletext is standard in some 40 percent of new color television sets.

Many viewers now accept and expect teletext as a natural extension to their television viewing. The ORACLE program offers flight information, quizzes and competitions, and pages of advertising, which pays for it all. Viewers will expect it to continue to be available. The ITC should be able to consider how much of its teletext capacity is needed to sustain a reasonable service.

The takeup of new technology has been impressive in recent years, but the reasons are sometimes unpredictable. More than 70 percent of British homes now contain video recorders. However, they are used primarily for time-shift programs, not for rented tapes of films. People always grumble about repeats; it is what the broadcasters repeat that matters. Never underestimate the public appetite for nostalgia nor the broadcasters desire for keeping the status quo.

**Satellite Receiving Equipment for the Home Market**, Mr. David Levitt, Marketing Director, Comet Group plc

The success of satellite broadcasting depends on a buoyant economy, attractive programing, successful promotion, and good distribution. At the center of it all is the customer. There is enough research available to suggest that the customer is far from satisfied.

We, as retailers, see the customer's confusion, hear his complaints and problems, before and after sale. The part that retailers play is crucial now, when confusion is running high and customers are receptive, but cautious. Retailers, like Comet, have a role to play. We

- Provide experience to the product and give it credibility
- Explain, inform, and reassure the customer
- Provide an environment that is conducive to buying
- Look after customers during and after the sale.

The Astra service began in February 1989 and an estimated half million dishes were installed last year. The Financial Times Satellite Monitor reported that a further 61,000 were installed in January 1990, bringing the direct to home service to about 2.5 percent of all households in

the U.K. During 1990, about 1.5 million systems are expected to be installed.

In marketing a new product, there are four stages of development:

- Ideas - the product is all potential and no one is making any money out of it
- Development - consultants and advisors are the only ones making any money
- Early marketing - advertising media and conference organizers make money
- Success - everyone makes money.

Satellite has now reached stage 3; conference organizers are making money.

There are customer satisfaction problems with program choice, lack of product understanding, and customer service. The customer is concerned about value for money, system complexity, obsolescence, price stability, and system service reliability. The sales organization needs to respond with accurate information, showed credibility, brand security, personal service, and appropriate environment. The Golden Rule in marketing is to listen to the customer.

**The Future of the Satellite Equipment Industry,** Mr. Peter Groenenboom, Consumer Electronics Division, Philips International

Fortunately, we have overcome the technical problems of satellite TV, and the first MAC products are in volume production. However, it has taken what seems to some a very long time. Even popular developments, such as color TV and compact disks, took around 4 years to achieve a market penetration of 5 percent. The video cassette recorder (VCR) took even longer. I expect to see about 5 percent penetration of the market for satellite TV by the mid 1990s, followed by a period of explosive growth.

We Dutchmen are much better at foreign languages than, for example, the British. On the other hand, the British are the very best at making television programs. In the Netherlands, the BBC stands head and shoulders above its rivals and its programs are viewed in English. However, the popular BBC programs achieve only a small percentage of the Dutch audience, and in most other European countries the figures are even lower. If you want to reach a mass audience, the program must be presented in the expected audience's language.

We are now at the very beginning of the transition stage from PAL to the more suitable transmission system, MAC, to which all program providers will migrate. Starting toward the end of 1991, the leaders will start widescreen 16:9 MAC transmissions to dominate the profitable movie channel business.

Some of the terrestrial broadcasters see a future in 16:9 "PAL+" with digital sound, a theoretical concept at present. PAL+ is unlikely to be available before 1994-1995, by which time HDTV will take off. So PAL is a cul de sac.

Satellite TV in Europe is now in chaos, with satellites in different orbital positions, using different frequencies with different polarizations. Some satellites are regulated while others are not, even though they transmit TV programs direct to home. We forgot to establish a Federal Communications Commission (FCC) here in Europe.

Of course, others also have their problems. For some years, Japan's NHK has been floating its Hi-Vision MUSE trial balloon outside of Japan, hoping that foreign passengers would jump aboard. Here in Europe, we have rejected it firmly and chosen the MAC system. In the U.S., the FCC has effectively ruled it out.

In Japan, equipment prices will be sky high and the Hi-Vision public broadcasts are no more than a few hours per week of experimental transmissions on BS-2b. Official MUSE transmissions cannot start before the end of 1991 or early 1992 because they will use the backup BS-3b satellite which will be launched in mid 1991.

In the U.S., the FCC has ruled that terrestrial HDTV transmissions must fit within a 6-MHz bandwidth. We, at Philips, have joined forces with National Broadcasting Company (NBC), Thomson, and the David Sarnoff Research Center in the Advanced Television Research Consortium. As a first step, we will develop a wide screen higher resolution Extended Definition TV (EDTV) system for the U.S. and the rest of the National Television System Committee (NTSC) world.

We will also be working on the Simulcast system for fitting HDTV into the 6MHz demanded by the FCC. Thus, broadcasters will be able to cover an event with HDTV systems. Then, they will transmit an NTSC channel and separate HDTV channel using the same source material, but without the need to maintain compatibility between the signals. Although the details of this system are not yet fixed, it will meet the needs of viewers in the U.S. and other 60-Hz countries, like MAC offers viewers in 50-Hz countries.

Another recent U.S. initiative is HDTV broadcasting via a DBS. Since DBS plus cable falls outside the FCC/NTSC-compatible ruling for terrestrial broadcasting, full HDTV can be broadcast via DBS plus cable. Four of the biggest U.S. media companies, including NBC, will invest in the new TV venture scheduled for 1993. The 50-Hz world will move to MAC in the long term and the 60-Hz world will embrace the system developed for NTSC countries.

Clearly, the pragmatic Japanese industry itself is moving to MAC. In Berlin in 1989, Japanese manufacturers displayed many MAC satellite tuners. Since then, Sony has been experimenting with HD-MAC in Germany and many Japanese businessmen have approached us by wanting to become involved with our HDTV project.

In Europe, we have seen how the EUREKA HDTV project enabled effective cooperation between industrial and broadcasting organizations. As a result, we have been able to develop all the key systems needed for

making HDTV programs to our 1250-line, 50-Hz standard, and have been busy stockpiling for some time. The EUREKA system goes public from this year forward with coverage of a whole series of sporting events starting this summer with the World Cup football in Italy.

Also, broadcasters are producing an increasing number of cultural and entertainment programs. In 1992, HDTV public broadcasting will start here in Europe with coverage of the Winter Olympics at Albertville, and the Summer Olympics in Seville.

The Brussels-based organization, Vision 1250 (sponsored by the national governments of the European Community [EC] countries and the European Commission) will coordinate the activities of industry, the European Broadcasting Union (EBU), broadcasters, and transmission organizations. This coordination should ensure success of HDTV in Europe.

Eurocrypt M is now available to provide a conditional access system to satellite broadcasts. In combination with MAC and Eurocrypt, the Smart Card gives the highest possible security and protection against pirates.

Finally, the Domestic Digital Bus (D2B) is a new system for connecting consumer electronics equipment together. For example, a TV set from manufacturer A can talk to a VCR from manufacturer B and a compact disc video from manufacturer C. Philips is already starting to supply a line of MAC products: MAC tuners, Eurocrypt decoders, and D2B-equipped products.

**Prospects for U.K. Cable**, Mr. Jon Davey, Director General, The Cable Authority

Our franchising program covers 14.5 million homes, two-thirds of the population of the U.K. Thus, we are in the middle of a cable boom. In the U.K., new programing is becoming available that cable deliver ideally to the home. A year ago there was the expansion of Sky's programing. Following that was the beginnings of the expansion of cable's unique programing. The expansion began with the launch of Discovery Channel last year and then with the first experiments with pay-per-view services. In April, BSB's services were launched, which is available on cable before dishes are available.

Telecommunications potential of cable has also created increased interest. American telephone companies have spotted the opportunities here of not only contributing their telecommunications expertise to a cable business, but of participating in cable television. They see cable television as having a natural affinity with their core business, but from which they are excluded in the U.S.

North Americans are predominant in the cable business in the U.K. For homes passed by franchises already awarded, U.S. West is top of the league. Pacific Telesis, the California based company, is in fifth position. The third largest American cable operator, United Artists, and two major Canadian companies, Videotron and Maclean Hunter, are in second, third, and fourth positions, respectively. In 8th position is the British Company, Goldcrest Communications. British Telecom has been the largest single investor in U.K. cable over the last 5 years. As a result, they know that a cable business that is not integrated with their existing network does not fit their corporate strategy and they are now divesting many of their cable interests.

At the end of 1989 there were 15 franchises operating. By the end of 1990, that figure should be 50. By the end of 1991, most of the 136 franchises we have now advertised should have switched on. By the end of 1992, the annual build rate of cable in the U.K. should reach 2 million homes.

Future prospects for the cable will depend on several factors:

- Available financing
- Construction logistics
- Necessary programing for cable systems
- Role of telecommunications as a cable market
- Changes in the regulatory scene.

The indications from the three cable companies that are providing a telephone service are that this is a worthwhile business to pursue. Much will depend on the nature of the interconnection agreement negotiated with Mercury or British Telecom, specifically, the split of revenue between the cable operator and the telephone company. Another consideration is the freedom operators are going to have to provide future telecommunications service. This question will be addressed near the end of 1990 at the time of the duopoly review, when the nature of any competition to British Telecom and Mercury will be decided. When licensed in November 1984, Mercury was given 7 years from further competition. To summarize the prospects for U.K. cable, the situation now looks more favorable than at any time in the past.

**Creating a Broadcasting Structure for the Next Decade**, Madame Catherine Tasca, Ministre Delegue Charge de la Communication, Ministre de la Communication, France

A history of the last 10 years shows that TV systems are different in the various parts of Europe. Among the many choices facing the issue of creating a broadcast structure are:

- Create new broadcasting systems with one support system
- Diversify extensively
- Overcome traditional suppliers
- Create a European audiovisual space
- Offer a development aimed at increasing choice
- Create more cohesive methods.

If we look at color TV, it is likely that satellite and cable programs will improve both sound and image by using D2-MAC. Considerable visual improvement will come with the 16:9 screen ratio. There will be a general change

toward HDTV through HD-MAC. As matters progress, it will be necessary to avoid cannibalizing one country's system by another.

Thematic programs cannot exist by advertising income alone. The French Board for Regulation decided on a package for TF1 financing through subscription on Canal Plus. In addition, thematic programs call for a high level of investment to get started.

In France, France Telecom can join with the cable operators, resulting in more channels with more modulated tariff systems. The goal of the system is to improve penetration of the potential market, and to maximize tariff payments. In France over the next few years, cable and satellite will progressively develop to reach 1.2 to 1.5 million homes in 1992 out of 5.7 million homes passed.

Will we be able to satisfy the future demand for more channels, or will we have to accept failure? There is a risk in splitting up too much and being too dependent on programs produced outside Europe. Uncontrolled channel multiplication can result in offering programs that have a suffocating effect on European industry. In Europe, we must make it possible for national and European programs to be shown in different countries. Those thinking of provision of separate production must consider the need for a production sector for programs. General national channels must devote at least 10 percent of their orders to national producers.

In France, the objective is to participate in European production and to offer choice. Incentives will be offered to channels to get them to diversify, and other countries might use this approach. The preference is for programs rooted in national reality. Europe can better aim programs to the European audience.

Concerning Eastern Europe, we must strengthen the importance of historical ties rooted in the culture of each nation. Western Europe must help Eastern Europe to move toward democracy. Program production must spread over Western Europe and eventually over Eastern Europe as well; we must avoid the rush of programs from outside Europe. We can consolidate and succeed through the EUREKA program. The audio-visual program of EUREKA must be an important element for reinforced cohesion for European program development. Let us work together with public authorities and entrepreneurs.

The European preference for programs made in Europe is not a question of legislation, but based on a common preference of the viewers. We must remain open-minded to variations in techniques in different regions of Europe. Disney chose France to create a leisure park and a production studio for cartoons.

**Why the U.S. is Moving into Cable**, Mr. Mark Sena, Senior Vice President, International Services, Communications Equity Associates

Since 1983, Communications Equity Associates (CEA) has been introducing American companies to the U.K. market and helping U.K. companies attract Americans to do business here. The U.K. offers American cable operators opportunities that do not now exist in the U.S. Operators that are not significant players in the U.S. can get franchises here for 100,000 or 200,000 homes with densities of over 200 homes per mile.

Of the top 25 cable television operators in the U.S., only five are directly involved in franchising or operating systems here. However, there are 10 here that are in the ranking 25-50. So it is the medium-sized U.S. system operators that have mostly responded to the opportunities in the U.K.

American companies see marketing opportunities here when they see the relatively low penetration of the potential market for cable TV. U.S. phone companies' entrance into the U.K. market is an exception to the trend of medium-sized and entrepreneurial companies. Four of the Bell operating companies already have interests in U.K. cable franchises. I predict that at least two more will become involved within the next 3 months.

The U.S. companies recognize that programing is a driving force behind cable TV as a business. Before 1988, the programing that was available was weak and there were not many services that were cable exclusive. With the beginning of Sky TV, the Discovery Channel, other services, and the debut of BSB, Americans see that cable TV can offer something valuable to British consumers.

The pending change in the government's position on the ownership restrictions for non-EC companies is a positive development. I suspect that, once the law is changed, there will be many new companies entering the market via acquisitions and franchising. However, Americans have some concerns about what would happen if the Conservative government were voted out of power. American cable operators here believe that British financial institutions will pay more to the U.S. entrepreneurial companies later when they begin to understand and have confidence in the business. The fact that American companies can take home their tax losses and repatriate their profits ultimately in the U.S. is an attractive feature for them. While the number of Americans actually participating in the U.K. cable industry is not large, those that are here are very optimistic about the future. They believe in the technology and in consumers' desire to buy cable TV.

**The Role of Public Service Providers in the Next Decade-BBC View**, Mr. Michael Checkland, Director General, BBC

Public service broadcasting is simply broadcasting in the service of the viewer and listener. In the BBC, our funding mechanism reminds us constantly where our duty lies. The license fee is an annual contract with the public signed millions of times over. With commercial television the relationship may be less obvious. Yet, if ITV had not all these years acknowledged a similar obligation, why has there been all this fuss over the quality hurdle for Channel 3? I believe that the irreducible requirements of the public service that BBC should provide can be universal, impartial, good quality, and accountable.

- Universal - public service for everybody; terrestrial transmission at over 99 percent
- Impartial - price and guarantee of editorial independence
- Good Quality - every program the best of its kind; a vital element must be innovation and that involves risk
- Accountable - public pays directly for the BBC, £6 for two television channels, with regional variations, as well as four radio networks and regional and local radio.

The BBC is accountable to the Broadcasting Complaints Commission for allegations of unfairness or undue privacy intrusion. Soon we shall come under the scrutiny of the Broadcasting Standards Council.

Different parties interested in bidding for the Channel 5 franchise have approached us about the possibility of providing transmission facilities. At present, the government will not allow the BBC to compete for new broadcast transmission business. Why shouldn't we exploit the BBC's technical resources and experience to the benefit of the license payer?

The Bill similarly suggests that the BBC's research engineers, having released more frequency capacity through their ingenuity, face the prospect of that capacity being auctioned by the ITC for commercial users rather than being available for the BBC's program or trading objectives. What encouragement is that for us to invest in research?

**Broadcasting in Europe-The EC View**, Mr. Robert Verrue, Director, International Market and Industrial Affairs, Commission of the European Communities

Technical developments, regulatory developments in members, and developments in the market have shaped the EC's policy towards broadcasting. Technical developments in delivery systems, particularly cable and satellite transmission, have led to the chances for households to receive a much larger number of channels and to receive programs from other countries. Although much doubt persists about the feasibility of creating genuine Europe-wide programs, growing internationalization in viewing, program content, financing, and among operators is clear.

Government regulation has changed emphasis during the past decade. The emphasis shows a greater willingness to license new channels and to establish such channels on a commercial basis either through advertising or subscription financing.

Market developments have also strongly influenced the current outlook for broadcasting. The number of hours offered has increased. Finances are provided by an increase in television advertising from 2.7 to 8.5 billion ECU between 1980 and 1988, and new sources such as cable subscriptions (680 million ECU), pay TV, sponsoring, and bartering. Program production costs have also increased.

European policy has been built around three axes:

- Ensuring transparency of the market
- Breaking down market fragmentation through encouraging more circulation of programs through the EC
- Encouraging investment in audiovisual production through developing a secondary market for programs and applying portfolio techniques to reduce investment risks on a European market for programs.

The directive on "Television without frontiers" establishes an internal market for TV broadcasts. The directive removes the obstacles to cross-border circulation of national TV programs and introduces minimum harmonization of standards in advertising, sponsoring and program promotion, youth protection and right of reply. All broadcasts in the EC must respect this directive. The directive lays down the principle of home country control of broadcasts to the exclusion of multiple controls in each of the receiving members.

Article four of the directive envisages for European works where practical and by appropriate means, a majority proportion of broadcasters' transmission time. This excludes the time appointed to news, sports events, game shows, advertising, and teletext services, in all TV programs. In practice, article four is largely less restrictive than the dispositions in force for many years in several members, including the U.K. (86 percent local content for both BBC and ITV).

Article five of the directive provides, again when practical and by appropriate means, that broadcasters reserve at least 10 percent of their transmission time (alternatively, at least 10 percent of their program budget) for European works created by producers who are independent of broadcasters. This encourages the emergence collectively in Europe of a dynamic and successful independent production section for television programs.

Several other measures will be required in order for operators to be able to fully exploit the possibilities that it opens. Measures must

- Complete the necessary environment at EC level
- Promote the speedy introduction of new technologies
- Overcome specific obstacles to the exchange of programs.

The measures must

- Protect copyright for television programs
- Further specific measures to encourage independent program production
- Establish a secondary market for programs
- Ensure competition
- Ensure pluralism in the media
- Ensure transparency in the audiovisual market through collecting figures on market size, growth, program stocks, and trade
- Promote the speedy introduction of new technologies
- Overcome specific obstacles to the exchange of programs.

**An ITV View of the Auction of Britain's Commercial TV Licenses**, Mr. Richard Dunn, Chair, ITV Association

As the Astra channels and, to a degree, the BSB channels will live or die by market forces, the government had to legislate for a new framework. Questions that were posed in the runup to the White Paper focused on the role of regulation by Channel 3. If there were enough choice, the viewers would determine quality by their choice and there would be less need for quality of service to be legislated.

However, policy in the last 15 months has been moving away from market forces and toward greater regulation. David Mellor has said, "the Bill is not a deregulatory measure. It deregulates some matters, but where it regulates, it does so firmly."

Far from freeing ITV from its current public service obligations, the Minister says "the ITC has made it clear that it expects to operate a diversity test that will secure the continuance of a similar range of programing to that which is soon offered by ITV." He also added, "It is the most significant point that the ITC could make."

The case for auctioning commercial licenses is based on the achievement of greater objectivity, downward pressure on costs, establishing a market price for a public asset, and the highest possible return to the treasury. The case against auctioning is that big money can outbid good quality. Big money catastrophically destabilizes a £1,500 million industry for at least 2 years before and 2 years after the auction. There are plenty of pressures now acting against any resumption of inefficiency; the auction outcome is entirely unpredictable. Conditions like program quality cannot be defined in terms valid for a sales contract or acceptable in a judicial review. The likelihood of overbidding will impact adversely on the investment needed for quality programs.

The auction of ITV licenses is now beginning to look less like an auction and more like a regulated form of competitive tendering. The four principal changes made or proposed are the following:

1. The ITC will be able to issue "illustrative guidelines" to show all applicants what they will need to cross the quality threshold.

2. The ITC will be able to examine applicant's program plans, business plans, and financial bids all at once, and the Commission can reject any applications that appear to them to contain overbidding.

3. There is no guarantee there will be a second stage; perhaps only one applicant will surmount the quality hurdle.

4. If two or more applicants cross the quality threshold, the Commission must take the highest financial bidder since that is the most objective way of choosing between them.

I shall now give you four of the dozens of fences that must be jumped if you are going to be selected for a Channel 3 license:

1. The ITV rules must be followed and the current ITV companies know the course.

2. Channel 4 will keep its current pay, will sell its airtime competitively with ITV, and ITV must fund any Channel 4 deficit below 13 percent of commercial revenue. That will entitle ITV to receive 50 percent of any surplus above that figure. The unknown is how well Channel 4 will perform in the market.

3. Another somewhat imponderable is the fate of Channel 5, the most deregulated part of the Bill.

4. What happens to the BBC beyond 1996 could be the biggest hurdle of all. If, in 1996, the BBC takes advertising on part or all of one or two of its TV channels, the impact on ITV would be devastating. Channel 4 would die and Channel 5 would be stillborn.

If the system works, quality should win, a more than fair price will be paid for the right to broadcast, and the real winners will be ITV's viewers throughout the regions in the 1990s.

**The Increasing Commercialization of the Broadcasting Industry in Europe**, Ms. Janice Hughes, Vice President, Booz Allen & Hamilton International (U.K.) Limited

I pulled together all of our forecasts on Europe to 2000 for the broadcasting industry and arrived at the figure of £35 billion. This doubles the present £17 billion.

The four factors that will determine this revenue growth:

1. Increased advertising revenues

2. Arrival of pay TV

3. Continued high growth of VCR rentals and sell through

4. Addition of 127 million households in Europe's Eastern Bloc.

In TV advertising, on a per household basis, Europe spends half that spent in the U.S. or Japan. Increased channel choice and more TV viewing hours will lead to increased advertising revenue. If the share of gross domestic product spent on advertising rises towards the U.S. level of 0.58 percent, and European growth rates are at 4 percent per year, the total TV advertising fund would rise from almost £8 billion today to over £12 billion by 2000.

With the increasing interest in pay TV films and the rapid growth of the cable industry, the total pay TV revenues across Europe could reach £9 billion within the next 10 years. We can add the license fees paid to public service broadcasters amounting to £4 billion, bringing the total to £25 billion.

The decline in cinema viewing has stopped and is rising again. The video rental market is buoyant. For example, "ET" has earned over $230 million from video rentals. By 2000, cinema and video rental revenues will be adding a further £6 billion to the film and TV industry in Europe, bringing the total to £31 billion.

We believe that the Eastern Bloc will be able to add another £4 billion to the broadcasting industry giving a grand total of £35 billion by 2000.

The new wave of mergers and acquisitions activity is generating four kinds of ownership changes:

1. Strategic acquisitions by nonmedia investors such as construction companies, utilities, water, and electricity companies

2. Telephone companies who see broadcasting as a new value-added activity with relatively low entry costs

3. Large media investors who seem to have a compulsive desire to own TV

4. Existing entertainment companies who either seek geographic expansion into Europe or vertical integration to control the entire value chain of production, distribution, and sales.

In the 90s, we will see change through these new ownership structures. Industrial pay TV or DTH may even bypass cable. This may occur not only in Europe, but also in the U.S., where we now see 108 new bypass channels planned by Murdoch, NBC, and Cablevision. Finally, HDTV may be the lever that will give the Japanese the opportunity to overturn the structure of the industry in the 90s.

**How to Make Money out of Pan-European Television Channel**, Ms. Marialina Marcucci, Managing Director, Super Channel

Right now, in Northern Europe (and especially in England) the only realities on which one is focusing are the realities of Astra-Sky and BSB. This is a negative approach to a positive development of commercial satellite television. The only goal is to clone with private money the national terrestrial broadcasters, and invest in a type of half-baked technology.

A year ago, who could have predicted the events that have just taken place in Eastern Europe? Who dared to more than speculate about a reunited Germany, and under NATO's blessing? Events have overtaken expectations, the political world is surprised, the financial world is frightened. The danger is that because of a sense of urgency, the wrong decisions may be taken under the pressure of say, imminent elections. The very will of the people is pushing the media towards a system of total integration. The TV boom of the future is happening. The integration is becoming reality.

Telematic has only apparently been kept dormant. The cable system, which by gearing up for a giant leap towards total expansion, will, with its capacity to generate cash, be the right vehicle for the right investors. The cable system will provide Europe with the only real opportunities for social and cultural integration. That will make possible interactivity between people who appear so different by their needs for sociocultural development. There are no intermediate steps nor alternative technologies if success is to be long lasting.

Super Channel is proceeding with a procedure that is aggressively European, striving to learn and understand what is on the other side of the wall. By the end of 1990, Super Channel will have reached 25 million homes in Western Europe and probably as many again in Eastern Europe. Countries like Italy, for example, where the possibility and interest for cable expansion seemed unlikely, are now seriously looking at cable as the only alternative to the present aerial saturation. There are many North Americans and Japanese in this audience. They are here because Europe has finally been born and cable expansion and development will be the instrument necessary for Europe's growth.

Europe needs a system, a European system, all embracing, in which Europeans and Europe can fulfill their desire to intermingle, to explore, to know, to cooperate, to socialize, and thus create the basis for long-term financial relationships. Super Channel is expanding, not only because we have worked hard and well, but also because Europeans need and want Europe at a touch of their TV remote control.

**The Future European Market for Pay Television**, M. Marc Tessier, Directeur General, Canal Plus International, France

The European pay TV market, now with 3 million subscribers, is likely to soar to 7 million in 1992, and more than 10 million by 1995. This will be because the pay services are more easily accessible and may double in the next 5 years from 35 million to 70 million homes. France excepted, the annual rate of growth will show an impressive increase in other European countries. The number of subscribers will jump from barely 500,000 to 5 or 6 million. Consequently, the revenue for pay TV services will reach £2 billion in 1995.

Growth factors:

- Long-term visibility. The pay market will benefit from the long expected surge of the cable industry in countries like Germany, Scandinavia, Benelux, and at a slower pace, France. In addition, new opportunities will emerge from the launch of direct to home satellites and the improving performance of the telecommunications satellites. The French experience will also be extended to Spain, with an over-the-air network being assigned to a pay service, and after a short period of legal reforms, to Portugal
- Demand for top exclusive programing without advertising
- Major investments in 1990 and 1991, particularly from leading media companies, including Canal plus, Bertelsman, Prisa, and News Corp.
- Success of Canal plus paved the way for similar services throughout Europe: combining a broad-ranging programing effort and sophisticated marketing.

The growing European market will adopt specific patterns. Unlike the U.S. services, primarily offered through cable, the European ones will cost £15-20 month. The European market will create less costly programs (family or children pay services, cultural movies), but likely will be sold only with the leading ones, on the cable and the DTH satellites as well.

As long as cable operators continue to deny investment in descrambling units and oppose involvement in the management of tiers, the market will be a pay operator-led one. For example, Canal plus is the leading player in the confusing development of the TDF1/TDF2 services, rather than TDF. Although another leadership is still possible, no such move has yet become clear.

As a result of the developing patterns in Europe, the pay services will differ from those in the U.S.; e.g.,

- Higher fees
- More programing content
- Complex organization with specific expertise
- Lower penetration: 7-10 rather than 34 percent.

In the forthcoming years, pay services will play a key role in the broadcasting and communications industry by:

- Accounting for a large share of the revenue of the film industry in Western Europe
- Playing a strongly aggressive role in the sports market at the expense of mainstream broadcasters
- Providing new technologies, like smart cards, which will establish the basis for specific new services like pay-per-view ones.

Based on the U.S. experience, major developments can be foreseen. Once the technical units are widely sold to interested consumers, additional more targeted services will become available adding to the diversification of TV offered. By raising new revenues, the pay TV market will sustain the emergence of a strong European TV industry, more original TV programing will be available, and they will show more music and sports programs.

**The Need for a Secondary Program Market in Europe**, Mr. John Howkins, Director, ETR Limited

Unlike the U.S., Europe does not have a large stock of existing programs that new stations can buy. The existing broadcasters have the largest libraries, but they are unwilling to sell to potential rivals. The independent producer is willing to sell to new stations, but most independent producers do not have the rights to their programs. They have sold the rights to the broadcaster who commissioned them in the first place. So the cause of the logjam is the monopoly of the major European broadcasters, both radio and television.

Europe has too high a proportion of first-run stations. We need more second-run stations, and this move would also benefit the first-run stations, since it would lower their sourcing costs; it would also dramatically increase the revenue of independent producers.

The U.S. has a flourishing secondary market in programs largely because of the strict boundary lines between the three main sectors--stations, networks, and producers. These boundary lines are stricter than they are in Europe. The U.S. model ensures that producers can get a good price for the product, the network gets enough flow of competitive first-run programing, and the stations can choose from a good selection of second-run programing. Of course, there are problems about agreements on costs and prices.

Local stations in the U.S. are not competitive with other local stations. They function effectively as 220 separate markets. Also, once they sell a program to one local station in a market, they cannot sell it to another station in the same market. Nor, can they import distant signals by cable.

In the U.S., a distributor can expect an average of about $1 million per episode for an off-network show. Some shows go for over $2 million and Cosby received about $4.5 million. Cable syndication prices are as high as $400,000.

A good secondary market requires:

- Many independent producers
- Independent producers supply a reasonable proportion of first-run programs to the primary broadcasters (15 percent or more)
- Independent producers can keep rights, if they wish, to their own production
- Independent producers can sell to secondary stations
- Secondary stations do not compete with each other.

The secondary market in Europe is not healthy. Italy was the first in Europe to have a secondary market, followed by France, Britain, and the FRG. Spain and Ireland are about to begin secondary markets. However, the rules do not require these so-called secondary markets to qualify in all respects for the above-mentioned

requirements for a good secondary market. For example, in the U.K., the only hope for a good secondary market is satellite or Channel 5, when it comes into being.

One of the key questions about Sky and BSB is whether they should provide first- or second-run channels. With most of their channels, there is no choice. The choice comes in their general entertainment channels. Should they be second-run channels for British material or should they seek to become first-run channels? Some ITV companies are seeking a ban on ITV's syndication sales to Sky and BSB. This inhibits the secondary market still further. On the other hand, BBC sees the secondary market as an opportunity to earn more revenue.

Channel 5 offers a unique opportunity to create an entirely new sector of secondary stations, complementing the national primary stations, and providing much-needed syndication revenues to independent producers. Instead, Channel 4 will probably operate as a national first-run channel.

The dilemma facing Europe is that the independent producers' future is linked with the new entrants (who need them, but cannot afford them) while the established broadcasters, who can afford them, do not really need them. Without resolution of this problem, Europe will be a secondary market, in the wrong sense.

**The Contribution the U.S. Can Make to European Programing,** Mr. Patrick Cox, Managing Director, NBC Europe

There is some debate about whether Europe can supply 50 percent of its needs for new programs, even using all of its resources such as the EUREKA program. New initiatives have been slow to develop, but perhaps their needs can be filled over time bringing Europe to maturity in this field. The process will move toward commercial pluralism. The situation now is that the production in Europe is nationalistic and high quality is expensive. Once commercial pluralism is accepted, higher volume will be on the way. The change in Europe is handicapped by lack of access to markets outside of Europe. More openness is needed on both the European and American continents.

In the U.S., the TV industry is in a state of change. In the 1970s there were three national networks. Now, there are 27 cable networks. The three major networks take most of the advertising market, but this is not enough to pay for production costs. Each major network spends more than $1 billion per year on drama. Networks need to find ways to cut production costs. Networks are producing more of their peaktime material than ever before. As of November 1990, they can produce all of their 22 hours per week themselves. All of this sort of development will accelerate vertical integration of the broadcasting industry in the U.S.

There is potential for American program producers in Europe. A large part of the broadcasting funds in Europe will be spent on program production in Europe. Eventually, the European market will begin to resemble the U.S. market in all respects. And it will encourage joint ventures involving enterprises from different countries, leading to programs with international appeal. Now, the best programs are national productions. One important consideration is that of European first-run productions being usable elsewhere, for example, in the U.S. Consequently, peaktime programs may need to be in English for easy movement to the U.S. Spanish language programs will be successful in South America.

As viewed from the U.S., the European market is very important. There will be groups from the U.S. and Europe forming partnerships for strong ventures. As to the form the partnerships might take, the stimulus can come from the video industry and financial services industry. Likely there will be many global partnerships for creative as well as economic reasons. Management structures will be adapted to market needs. Europeans will have a real chance to compete effectively in world markets.